

**Notice of Allowability**

Application No.

09/814,590

Examiner

Khanh Tran

Applicant(s)

GARG ET AL.

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 07/11/2005.
2. ☒ The allowed claim(s) is/are 1, 3-4, 6, 8-10, 15-16 and 19-20, which are renumbered as 3-4 renumbered 2-3; 6 renumbered 4; 8-10 renumbered 5-7; 15 renumbered 8; 16 renumbered 9; 19-20 renumbered 10-11.
3. ☒ The drawings filed on 27 July 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment                               |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|   | 9. <input type="checkbox"/> Other _____.   |

1. The Amendment filed on 07/11/2005 has been entered. Claims 1, 3-4, 6, 8-10, 15-16 and 19-20 are pending in this Office action.

2. Claims have been renumbered as shown below:

- claims 3-4 renumbered 2-3;
- claim 6 renumbered 4;
- claims 8-10 renumbered 5-7;
- claim 15 renumbered 8;
- claim 16 renumbered 9;
- claims 19-20 renumbered 10-11.

### ***Response to Arguments***

3. Applicant's arguments, see pages 8, filed on 07/11/2005, with respect to claims 1-4, 8-9, 19 and 21 have been fully considered and are persuasive. The rejection of claims 1-4, 8-9, 19 and 21 has been withdrawn.

### ***Reasons for Allowances***

The following is an examiner's statement of reasons for allowance:

4. Regarding claim 1, claim 1 is allowed after being amended to include allowable limitations "wherein the complex mixer includes: (i) a first multiplier and a

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second multiplier each multiplying the I-channel scaled data signal by a sine waveform and a cosine waveform, respectively; (ii) a third and fourth multiplier each multiplying the Q-channel scaled data signal by the sine waveform and a cosine waveform respectively; (iii) a first summer adding the result of the second multiplier to the result of the third multiplier multiplied by negative one to generate the I-channel frequency shifted scaled data signal; and (iv) a second channel summer adding the result of the first multiplier and the result of the fourth multiplier to generate the Q-channel frequency shifted scaled data signal".

5. Regarding claim 10, claim 10 is allowed after being amended to include allowable limitations ""wherein: the finite impulse response filter is a 16 tap finite impulse filter and each set of filter coefficients includes 9 non-zero coefficients, each coefficient being a 10 bit coefficient".

6. Claim 15 is allowed.

Regarding claim 15, claim is allowed over prior art of record because the cited references do not teach or suggest the claimed step of "complex mixing the scaled data signal includes: (i) subtracting the result of the Q-channel scaled data signal multiplied by a sine waveform from the result of the I-channel scaled data signal multiplied by a cosine waveform to generate an I-channel frequency shifted data signal; and (ii) adding the result of the Q-channel scaled data signal multiplied by a cosine waveform from the

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result of the I-channel scaled data signal multiplied by a sine waveform to generate a Q-channel frequency shifted data signal".

7. Claim 20 is allowed.

Regarding claim 20, claim is allowed over prior art of record because the cited references do not teach or suggest the claimed step of "wherein: the finite impulse response filtering is 16 tap filtering and each set of filter coefficients includes 9 non-zero coefficients, each coefficient being a 10 bit coefficient".

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### **Conclusion**

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh Tran whose telephone number is 571-272-3007. The examiner can normally be reached on Monday - Friday from 08:00 AM - 05:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KCT

  
**MOHAMMED GHAYOUR**  
**SUPERVISORY PATENT EXAMINER**